DECEMBER 11 & 12, 2017
KwaTaqNuk Resort
Polson, Montana

Montana Aquatic Invasive Species Inspection & Monitoring Workshop Report

WORKSHOP CO-HOSTED BY:
THE CONFEDERATED SALISH & KOOTENAI TRIBES
AND
THE UPPER COLUMBIA CONSERVATION COMMISSION

REPORT PROVIDED BY THE UPPER COLUMBIA CONSERVATION COMMISSION COORDINATOR (DNRC)

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AGENDA

AIS INSPECTION & MONITORING WORKSHOP
Co-Hosts:
Confederated Salish & Kootenai Tribes
and
Upper Columbia Conservation Commission (UC³)

Monday, December 11th & Tuesday December 12th, 2017
KwaTaqNuk Resort, 49708 U.S. 93 Polson, MT

MONDAY 12/11 **WATERCRAFT INSPECTIONS**

Morning Session: **All Participants Welcome**

8:30 AM	Welcome	Germaine White, CSKT Natural Resources Division of Fish, Wildlife, Recreation & Conservation
8:40 AM	Agenda/Objectives	Lori Curtis, Chair UC³; Whitefish Lake Institute
8:45 AM	UC³ Partnership	Kate Wilson, DNRC Coordinator UC³
	Watercraft Inspection Overviews (Maximum time each presenter: 15 mins)	
8:50 AM	Tom Woolf	MFWP, AIS Bureau Chief
9:10 AM	Erik Hanson	CSKT
9:25 AM	Mike Koopal	Whitefish Lake Institute
9:40 AM	Jay Monroe	Blackfeet
9:55 AM	BREAK	
10:05 AM	Caryn Miske	Flathead Basin Commission
10:20 AM	Lindsey Bona-Eggeman	Missoula County/Clearwater
10:35 AM	Brian McKeon	Glacier National Park
10:50 AM	Martina Beck	Province of British Columbia (phone)
11:05 AM	Cindy Sawchuk	Province of Alberta
11:20 AM	Dennis Madsen	Waterton National Park

Late Morning/Afternoon Session: Working Session for All Participants Running Inspection Programs

11:35 AM	Desired Outcomes for 2018 Inspections	Tom Woolf/All
	WORKING LUNCH (provided)	
12:15 PM	Education & Messaging	
12:35 PM	Communications	
1:00 PM	Handling of Fouled Boats	
1:30 PM	Inspection Questions, Data Collection & Data Management	
2:00 PM	BREAK	
2:30 PM	Reciprocity & Documentation	
3:00 PM	Training Coordination	
3:20 PM	Standing Water	
3:40 PM	Enforcement	
4:00 PM	Wrap Up, Next Steps	Lori Curtis, Tom Woolf, Kate Wilson
4:30 PM	ADJOURNMENT	

TUESDAY 12/12 **MONITORING**

Morning Session:	**All Participants Welcome**	
8:30 AM	Welcome	Germaine White, CSKT Natural Resources Division of Fish, Wildlife, Recreation & Conservation
8:40 AM	Agenda/Objectives	Lori Curtis, Chair UC^3, Whitefish Lake Institute
8:45 AM	UC^3 Partnership	Kate Wilson, DNRC Coordinator UC^3
	Monitoring Overviews (Maximum time each presenter: 15 mins)	
8:50 AM	Tom Woolf	MFWP AIS Bureau Chief
9:10 AM	Erik Hanson	CSKT
9:25 AM	Mike Koopal	Whitefish Lake Institute & Northwest Montana Lakes Volunteer Monitoring Network
9:40 AM	Dona Rutherford	Blackfeet
9:55 AM	BREAK	
10:05 AM	Phil Matson	Flathead Biological Station
10:20 AM	Brian McKeon	Glacier National Park
10:35 AM	Caitlin Mitchell/Joann Wallenburn	Clearwater Resource Council/Blackfoot Challenge/Swan Valley Connections
10:50 AM	Martina Beck	Province of British Columbia (phone)
11:05 AM	Ron Zurawell	Province of Alberta
11:20 AM	Barb Johnston	Waterton National Park
11:35 AM	Desired Outcomes for 2018 Monitoring	Tom Woolf/All
Afternoon Session:	**Working Session for All Participants Running Monitoring Programs**	
12:00 PM	LUNCH (provided)	
12:45 PM	Monitoring Program Discussion Goals, Issues, Protocols	All
2:30 PM	BREAK	
2:40 PM	Monitoring Program Discussion Continuation	All
4:00 PM	Wrap up, next steps	Lori Curtis, Tom Woolf, Kate Wilson
4:30 PM	ADJOURNMENT	

ACTION ITEMS

ACTION ITEM	LEAD/COMMITTEE	NOTES/STATUS
Send link of subsurface podcasts, CSKT AIS website, and Flathead Lakers video to UC3 List Serve	Kate Wilson	Send with notes from workshop when complete. See notes on resources on p. 12 Status: Completed
Consider recommendation to Gov/Legislature on boat registration and fee to fund AIS program (possible electronic registration)	UC3 Board/Inspections Committee	Suggestion from workshop discussion. See notes on p. 16
Consider recommendation to Gov/Legislature on Drain Plug rule state-wide (rescinded previously)	UC3 Board/Inspections Committee	Suggestion from workshop discussion. See notes on p. 13 & 16
Consider recommendation to Gov/Legislature on increasing penalties for failing to stop for inspection (including authority to hold/quarantine boats - burden of proof with live mussels not realistic)	UC3 Board/Inspections Committee	Suggestion from workshop discussion. See notes on p.16
Consider recommendation to Gov/Legislature on increasing Rule-making support	UC3 Board/Inspections Committee	Suggestion from workshop discussion. See notes on p. 14
Consider recommendation to Gov/Legislature on effective containment at Tiber	UC3 Board	Suggestion from workshop discussion
Explore sea plane issue – how best to mitigate risk	UC3 Board	Suggestion from workshop discussion
Contact/engage Flathead AIS Working Group – need contacts to follow up	Kate Wilson/Lori Curtis/Education & Outreach Committee	Suggestion from workshop discussion
Engage stakeholders and public in AIS issue in Lower Clark Fork, Bitterroot Valley (other parts of UC)	Kate Wilson	Suggestion from workshop discussion. Kate and Lori reaching out to various watershed groups in UC
Explore options/funding opportunities to reprint CMP AIS ID Guide	Education & Outreach Committee	Suggestion from workshop discussion. Existing ID guide for AIS. See notes on p. 12
Create a handout for expectations and requirements for different programs	Education & Outreach Committee and/or Inspections Committee	Suggestion from workshop discussion. Focus on different rules & requirements at different inspection stations. See notes on p. 12
Build inventory of existing E&O resources & assess gaps in materials and messaging	Education & Outreach Committee	Suggestion from workshop discussion. See notes on p. 12

Regional meeting with MDOT and partners on signage	Zach Crete, Mike Koopal, Lori Curtis	Suggestion from workshop discussion – partners have had issues getting signs up. See notes on p. 11
Develop contact list/call tree – share with all inspection partners (enhance communication)	Inspections Committee	Suggestion from workshop discussion. See notes on p. 12
Development of shared protocols on inspections and notifications of boats: • High risk and mussel fouled boats; • Notification and ensuring follow up (intercept a boat, want to hear back on what happened with the situation - esp. for partner stations that intercepted). • Consistent use of seals – only on boats 'good to go' (lock to trailer for mussel fouled)	Inspections Committee	Suggestions from workshop discussion. See notes on p. 13
Closed cargo trailers/toy haulers or inside campers – can't tell if watercraft inside	Inspections Committee	Suggestion from workshop discussion. See notes on P. 14
Rail transport – boats being delivered that way sometimes (not widespread yet but could become more frequent)	Inspections Committee	Suggestion from workshop discussion. See notes on p. 14
Training needs: • Open FWP training regionally to other • Dates from all groups should be shared – location/dates • Some boat shops want to be trained as well – way to offer to wider audience?	Inspections Committee	Suggestions from workshop discussion. See notes on p. 14
Overall landscape of watercraft inspections – see the gaps and address them	Inspections Committee	Suggestion from workshop discussion
Reporting of monitoring efforts and detections: • Can new FWP data app handle composite samples? • IT/SAR from	FWP (Tom Woolf)	Suggestions from workshop discussion

• Training on use of data app • Training on use of MT Natural Heritage Program (use of data)		
Share all monitoring protocols with all partners	All that monitor for AIS/Monitoring Committee	Suggestion from workshop discussion. See notes on p.25 Status: FWP shared draft with UC3
Develop annual monitoring plans/planning	Monitoring Committee	Suggestion from workshop discussion. See notes on p. 25
Work on shared SOP if possible – ensure consistency with partners	Monitoring Committee	Suggestion from workshop discussion. See notes on p. 25
Explore efficacy of monitoring at different depths: • thermocline data/oblique tow	Monitoring Committee	Suggestion from workshop discussion
Compile List of additional research that needs to be conducted		Suggestion from workshop discussion
Communicating about eDNA results (interpretation) needs to be ironed out in a protocol/MOUs with partners	Science Advisory Panel on eDNA/Monitoring Committee	Suggestion from workshop discussion

WORKSHOP SUMMARY

Inspections

Workshop speakers shared information on watercraft inspection stations before the workshop, which was compiled into a map (see appendix A) to provide a visual aid to locations of stations throughout the basin/region. The majority of inspection station partners (e.g. non-state) are located within the Upper Columbia (Confederated Salish & Kootenai Tribes, Whitefish Lake, Missoula County, Glacier National Park, Waterton National Park, Flathead Basin Commission), but regional partners (Blackfeet Nation, BC, Alberta) were also encouraged to participate given the proximity and importance of regional boundaries and transient nature of the overland transport of watercraft. Speakers provided an overview of their watercraft inspection programs from the 2017 season, focusing on station information (location, statistics, operating hours, staff, etc.), what worked well, challenges and any anticipated changes for the 2018 season.

In the afternoon, the workshop was discussion based, and covered topics such as education and messaging regarding inspection stations, partner communications, notification of high risk and mussel-fouled boats, inspections questions, data collection/management, reciprocity, training, standing water and enforcement. Discussion among practitioners that ran inspection stations was augmented by audience participation. Action items and suggestions from the afternoon session of the workshop are compiled (see above) and will be considered for further action from the Upper Columbia Conservation Commission (UC3) board or the UC3 Inspections Committee.

Monitoring

Workshop speakers shared information about their AIS monitoring efforts in 2017 prior to the workshop, which was compiled into a map (see Appendix B). The majority of AIS monitoring partners (e.g. non-state) are located within the Upper Columbia (Confederated Salish & Kootenai Tribes, Whitefish Lake/Northwestern Montana Lakes Volunteer Monitoring Network, Waterton Glacier International Peace Park, Flathead Lake Biological Station, Clearwater Resource Council/Swan Valley Connections/Blackfoot Challenge), but regional partners (Blackfeet Nation, BC, Alberta) were also encouraged to participate given the proximity and importance of regional boundaries and downstream flows. Speakers shared information about locations of monitoring efforts, what worked well, challenges and any anticipated changes for the 2018 season.

In the afternoon, the workshop was discussion based, and covered topics such as monitoring methods (microscopy, qPCR, eDNA), analysis, differences in protocols, decontamination of equipment, and preservation methods. Discussion among practitioners and the audience focused on the need for standardized and simplified protocols across the state, along with communication, notification and reporting needs. A technical discussion on methods ensued, that will be continued with the creation of a Science Advisory Panel focusing on the use and interpretation of eDNA as a potential early detection tool. Action items and suggestions from the afternoon session of the workshop are compiled (see above) and will be considered for further action from the Upper Columbia Conservation Commission (UC3) board or the UC3 Monitoring Committee.

Next steps

The UC3 meets next on January 24th in Kalispell (2510 US HWY 2). At this meeting, bylaws will be adopted and Committees will be developed. Currently a need for four Committees has been identified: education & outreach, inspections, monitoring and response planning. If there is interest in serving on a Committee, they will not be limited to UC3 members, but a statement of interest/qualifications must be sent to the UC3 Chair and/or Coordinator and they will be considered for appointment to a Committee. For the Inspections and Monitoring Committees, participants will likely be limited to current practitioners (e.g. currently operate inspection or monitoring programs) to ensure that the Committee is kept to a manageable size and so that emergent needs can be met in a timely manner.

Action items and suggestions from the workshop will go forward to the UC3 board and/or appropriate Committees for consideration. A Science Advisory Panel will be created in the coming months to further the discussion on the use of environmental eDNA as an early detection tool, and the UC3 Monitoring Committee will be involved in the effort and apprised of any recommendations that come from the panel.

The workshop provided an excellent opportunity to bring federal and state agencies, Tribes and partners together to discuss goals, issues and outcomes needed to enhance protections in Montana and the entire Columbia Basin to prevent the introduction and spread of aquatic invasive species.

DAY 1: INSPECTIONS

ATTENDANCE: Lori Curtis (UC3 Chair/Flathead Conservation District), Kate Wilson (DNRC), Tom Woolf (FWP), Zach Crete (FWP), Russ Hartzell (FWP), Phil Matson (UC3/UM Flathead Lake Biological Station), Ryan Evans (CSKT), Mike Koopal (UC3/Whitefish Lake Institute), Erik Hanson (CSKT), Joann Wallenburn (Clearwater Resource Council), Steve Rosso (Flathead Lakers), Stacey Schnebel (UC3/Flathead Electric Coop), Tom McDonald (CSKT), Bryce Christiaens (Montana Invasive Species Council Chair/Missoula County Weed District), Germaine White (CSKT), Dona Rutherford (Blackfeet Fish and Wildlife), Jay Monroe (Blackfeet Fish and Wildlife), Robin Steinkraus (Flathead Lakers), BJ Johnson (UC3/Sea Me Paddle), G.L. Hamilton (FWP), Gordon Luikart (UM Flathead Lake Biological Station), Chris Parrott (UC3/Jesco Marine), Barb Johnston (Waterton Lakes National Park), Sheena Pate (Crown of the Continent Geotourism Council), Chris Downs (Glacier National Park), Brian McKeon (Glacier National Park), Rod McNeil (UM Flathead Lake Biological Station), Rich Janssen (CSKT), Mary Riddle (Glacier National Park), Lindsey Bona – Eggerman (Missoula County Weed District), Evan R Smith (CSKT), John Fleming (House District 93), Nanette Nelson (UM/Flathead Lake Biological Station), Paula Webster (CSKT), Martina Beck, PHONE (British Columbia Ministry of Environment and Climate Change), Paul Kusnierz, PHONE (UC3/Avista)

PART 1: WELCOME & INTROS

Germaine White: Education Specialist for CSKT

Welcome to Flathead Reservation – Salish, Pend Oreille and Kootenai people

- Very important place - headwaters of the CRB and especially Flathead free of AIS – particularly zebra/quagga mussels. Ease with which people move between basins – AIS prevention a daunting task.
- Must bring dedication, energy, best of science, innovation and creativity: powerful tools, use them relentlessly. in this battle, we cannot afford to leave any of our tools out of the toolbox. Persistent, relentless, can succeed.
- Best of our science: not just western science. 'Traditional ways of knowing' or 'traditional ecological knowledge: accumulation of knowledge about a place that comes from a community that has lived in the place for thousands of years. 12k years of the tribes in western MT. Take care of the land, water and the plants and animals. Non-Indian settlement the briefest part of our history. Relationship between people and ecological processes. Accumulated wisdom, oral history, place names, ethical and spiritual relationship with land and water.
- Traditional ecological knowledge different than western science: western science based on objectivity, does not consider moral or ethical obligations.
- Sustainable development: taking from nature/ developing natural area considered to be ok so long as future generations needs are met. Only human needs. Concept remains focused on taking to satisfy human needs. Reciprocity with the natural world is different. Considers beyond human needs.

Lori Curtis: UC3 Chair

- Recognize efforts, people in the mood to collaborate.
- Results of workshop will fold into Committees under UC3. Charged with taking forward ideas that come out of the workshop.
- We face an enormous challenge. Bring most positive ideas, listen to one another, learn from one another.

PART 2: WATERCRAFT INSPECTION PROGRAM OVERVIEWS

1. **Fish, Wildlife & Park: Tom Woolf (AIS Bureau Chief)**

- Summary: Issues in the past, but we have this opportunity to move forward together. We can agree on a lot of things: protocols. Stats. Not just us, not just Flathead basin, this is a global issue and there are a lot of efforts going on out there.
- Hiring/Training: Localized training and hiring (starting in March). Pull people in a local community and set up small group trainings. FWP participation in partner training (and vice versa). FWP to share manual and training materials. Get protocols as synchronized as possible. Share materials and improve consistency (for state, for public).
- Protocols: definitions of 'decontamination' and 'high risk.' These words were issues. Not going to use decon for CDD anymore. Hot wash vs. decontamination (assumption of 'spotless' wash). Decontamination will be restricted to boats that are intercepted with mussels on them. 'Hot wash' for all other situations (e.g. high risk and not CDD). What is a high-risk boat? Can we get on the same page with what that means? All approach the same way. Fouled boat protocol, communication to partners. Improve partnership so expectations are clear.
- Changes for 2018: move several stations. Get shelters/storage on site. Reader boards (electric signs) will help improve compliance. Use of MDT message boards on highways at sites near inspection stations. Partner contracted stations: looking to partners around the state to see if there is interest in managing. Conservation Districts, Tribes, other partners. Focus on high risk locations. Station changes: Culbertson – move to Nashua. Duck Valley to Flowing Wells if possible. Subject to change but moving towards.
- Station operations: staggered openings depending on level of risk and traffic (late march to mid-May). Hours variable. Station challenges: remote locations, challenges finding and keeping good staff. Starting to hire soon for lead worker positions (at each station), help with supervision and oversight. Could use help finding good people to staff the remote locations. Now have benefit of time and quality control.
- Data collection: Colorado app on digital tablet for entering watercraft inspection data. Drop down menu for quality control. Electronic forms help with spelling errors and entry. 5 western states are currently using. If we can adopt in MT, can make available for all partners. Would be able to look up boat by HULL number that can show any partner with app exactly what/where boat was inspected. Passport to expedite inspections for low risk frequent boaters. Hopeful will have draft to share next week. One high risk form: last year there were many 'fail' forms that we used. Now just use one. Address high risk in just one form – will have available soon to share. Hopefully we can get agreement to use that form or something similar. Standardize what we are all doing and what the public sees. Data app needs approval from state (security, etc.), hopefully will have answer in next couple weeks.
- Seals: conveys that boat hasn't launched since inspection. Tool for communicating between inspection stations. Local boater program now 'certified boater program.' New outreach material development for user groups around the state – CDs want to take message to constituents and have requested assistance developing materials. Working closely with DNRC

and other partners as we move forward. New Public Info Officer. PR/Marketing firm campaign to target out of state boaters. Change message to positive spin – 'do your part to protect our waters' as proactive call to action.

- Violations: knowingly can be high fines and even a felony. But hard to prove 'knowingly.' Wardens and state police have helped with quarantine of vessels. Can quarantine for up to 30 days.
- Cooperation: Many changes happening. FWP needs input and feedback. Improve communication: open and consistent. AIS Team: Zach, Russ, Craig, Sarah, Jayden, Landon, Stacy, Jori, Jessi, Gail. Engage and work cooperatively with everyone throughout the state.

2. Confederated Salish & Kootenai Tribes, Erik Hanson (AIS Coordinator)

- Summary: CSKT closed most lakes to motorized boats. 1200 boaters applied to do a _____ on Flathead Lake. Worked with partners to do inspections. Polson office 5000 inspections. Partnered with Jesco and FBC on station in Kalispell. 1 fouled boat at Jesco station.
- Changes for 2018: Changing rule to inspection upon entry into Flathead Basin. Intercept high risk boat coming into basin (vs. require inspection before launch that targets less high risk). Operate 24 hours a day where possible. Getting close to securing funding for all. 24/7 Ravalli, Hwy 2 (work with FWP and Blackfeet on moving this forward).

3. Whitefish Inspections Program, Mike Koopal (Director of the Whitefish Lake Institute)

- Summary: Very busy season responding to the threat of ZM and other AIS. Different perspective than state wide – one lake, 2 access points. Headwaters of CRB, be good stewards to our neighbors downstream. Public drinking water source (Whitefish Lake), ZM could cause serious issues for city drinking water source. If pumped up to water treatment, all municipal infrastructure could be compromised. Recreation, property values and economic concerns. Whitefish City Beach and state park are only access points (exception being homeowner's association and county launch that allows small boats). A lot of local support for program. $225k (city provided $105k): City of Whitefish, DNRC, FWP, FCD, Whitefish County, Whitefish Community Foundation, The Lodge at Whitefish Lake, Whitefish Marine and Powersports. In 2017 over 3300 watercraft inspected between the two launches (over 6400 total visits including seal removal). 2013 city beach had inspection station – was previously based on education. Now open from 5 AM to 9 PM at night, May 1st to Oct 30th. Inspection required for all boats. Management plan developed.
- Off season & non-motorized: Supported FBC stations in the past (2014-2016). Whitefish City Ordinance and MOU with FWP on how stations operated. Use seals – plastic tie (black/white). Exit seals have provided efficiency. One fouled boat – intercepted by Blackfeet Nation. Preventative hot water flush in most cases: ballasts boats in particular. Online certification: non-motorized (May – Sept), access code (Oct – April). 20 question quiz, prompts user to learn more about issue. Off season any watercraft that wants to use lake must pass quiz to get code. 6400 in 2017 – total visits (including online certification and exit seals). During peak season, very busy sites. 501 people took online test, 1st year of program. Get certificate with access code. Decon station located in town, started July 19th when MOU was signed with FWP. City of Whitefish staffs the 2 inspection stations with park rangers. Decon station staffed and administered by WLI. Long term program for Whitefish.
- Worked well: Lucky to have actively engaged community – see benefit, recognize risk. Exit seals very effective. Self-certification program also worked well. Built long standing relationships and partners.

- Challenges: Need to streamline processes and get more consistent. Move decon station into town, closer to stations. Fielded some phone calls from concerned people.

4. Blackfeet Nation, Jay Monroe (AIS Inspections Lead)

- Summary: AIS Coordinator, Jay. This year went pretty smoothly. 3 stations: 18 employees. Cutbank/Seville, Hwy 89/Birch Creek, Hwy 2/Browning. Roving – game wardens are trained to inspect watercraft, a lot of enforcement coordination. They would periodically inspect boats, and also ensure that boats are stopping at stations.
- Season stats: 7009 inspections, 77 roving (game wardens), 968 waders and boots (included in inspection total). Require all boats and waders to be inspected prior to use. 863 high risk (12% of total). 195 were not previously inspected (of the 863). 372 failed inspections – plugs left in, fouled boats, dirty, etc. Plugs seem to be a huge issue (particularly Alberta, out of state)

5. Flathead Basin Commission, Erik Hanson (for Caryn Miske)

- Summary: FBC ran Clearwater and Pablo stations pre-season from early March to May (Missoula County took Clearwater over after May). FBC ran the Jesco station from May to September (weekends when FWP Region 1 office was closed). Jesco inspected 5000 boats. Jesco provided the site free of charge, and they made improvements (e.g. flattened, gravel, est. $17k). One mussel fouled boat intercepted at Jesco as well as a number of ballast boats from Canada with water in their ballast tanks that were not inspected as they entered Montana.
- 2018: Plans for 2018 are up in the air, however FBC has an MOU with CSKT to implement any watercraft inspection program.
- Concerns at Tiber/CF: No 24 hr. stations. No ramps closed. FWP setting up stations with hours to maximize efficiency. Discussion with concerns about people using local boater launches instead of getting inspection/decon. Enforcement discussion: 80 tix written and 300+ warnings. 4 full time wardens dedicated to AIS enforcement state-wide. More enforcement time with these 4 positions (1 based in Townsend, working on CF). Way to disallow fishing at night in regulation to address issue (of no inspection stations open)? Tom: that would be something to explore. Decision was made through the Gov's office to not close ramps or limit access. $85 penalty for not stopping at station. UC3 and MISC can be a conduit to making recommendations to address issues and improve situation (e.g. penalties, management at Tiber/CF).
    - Jay: boaters leaving Tiber – by the time they get to Seville station, if anything is found, flush hot water (even local boaters if there is water present). Hwy 2 boats getting hit with hot water as means of addressing before boats cross divide.

6. Missoula County Weed District, Lindsey Bona – Eggerman (Weed Management Coordinator)

- Summary: Partnered with FWP to run Clearwater station. Roving as well. March 2- April 14: FBC ran (8 am/6 pm). April 15-May 25: MC, 12 hours weekend (7-7). May – Sept: 12 hrs. day/7 days week (7-7). FBC inspected 385 boats/140 drive bys. April 15-Oct 15: 14,440 boats/2238 drive bys. 5795 motorized/9030 non-motorized. 12, 417 total (according to FWP. Diff probably raft guides with multiple boats, only one form filled out). Out of state: 638. 2 standing water, 2 veg. Only inspected one way this season (change from last year). Increase in inspections – more hours? Or actually more traffic?
- 2017 season: DNRC AIS Grant paid for roving station. 2 inspectors at all times. 109 visits/891 boats (light interview, not always inspected depending on situation. Concern for high traffic areas, bottle necking, etc.). 71% were local boaters. 9-10% hadn't launched previously. Only 5 boats from out of state that hadn't been inspected – all non-motorized.

    - Roving inspector in Swan: 1 inspector/4 days a week (10 hour days). Worked closely with Flathead Lakers. 1034 inspected.
- Worked well: Relationship with FWP once worked with transition. Local supervisors very helpful. Experienced staff. Increased compliance and awareness. Boaters were more interested in issue.
- Challenges: See same boats every day – sealing didn't make sense. 14k boats, data entry was a pain. Big backlog on data entry. Fire season also skewed numbers.

7. Glacier National Park, Brian McKeon (Supervisor of AIS Inspection Program)

- Summary: State Park different than state rules. Why? National Park Service Organic Act: created NPS with purpose to conserve scenery and natural history. 30 day quarantine imposed on boats. Headwaters of 3 continental scale drainages – feel obligated to protect.
- Timeline of 2017 season: Nov: All park water closed to boating (Glacier National Park AIS Action Plan, 2014).
    - Jan: Developed phased re-opening plan – low risk watercraft in 2017 moving to higher risk watercraft in 2018 pending season review. Assess how things were going in state.
    - May: opened Lake McDonald to non-motorized (landowners only) after inspection.
    - June: All other park waters open to non-motorized.
    - July: Lake McDonald open to landowner motorized watercraft after inspection.
    - Aug: Lake McDonald open to general public motorized watercraft following inspection and 30 day quarantine.
    - Oct 31: all park waters closed.
    - 2018: May 12 opening Lake McDonald to all watercraft (after inspection, 30-day quarantine). Non-motorized only at North Fork.
    - June – Sept: non-motorized only – east side. 30-day quarantine popular with fisherman and landowners. Don't get a lot of motorized boat traffic anyway. Lake McDonald only lake that will have motorized boats allowed. Lake McDonald, Two Medicine, St Mary, Many Glacier (ranger station): 0700 – 2100 with waning daylight decreases.
- Stats on non-motorized: 13,312 non-motorized inspections. Very dirty! Found many plants, snails, mud, etc. As people got message (clean boat = faster inspection). At first 80% dirty, but got better as season went on. Pack rafts used in backcountry lakes – inspection required but can be hard to enforce.
- Worked well: No mussels found on any boats. Innovative ideas for cleaning: portable wet/dry vacuums, warehouse style safety ladders for car toppers.
- Challenges: consistently dirty/wet boats. Increased inspection times. Very little compliance data collected. Boat inspection tagging system only moderately successful – tags expensive and hard to see on large lakes. Program shift in the middle of the season. No rinsing/inspection capability at Polebridge (North Fork). Looking for possible water sources.

8. British Columbia, Martina Beck (Mussel Defense Coordinator)

- Summary: 10 inspection stations in 2017, focused on eastern and southern borders (dawn/dusk); 1 was 24 hrs. (Golden, BC). 35k inspections; 2070 high risk; 639 decontaminations; 386 w/aquatic plants; 352 comm hauled; 25 mussel fouled (24 BC received prior notification on). Fouled boats came from Ontario (14), Quebec (2), Michigan (2), Texas (2), New York (2), Illinois (1), Arizona (1), and Ohio (1). 12 of the fouled boats were commercially hauled. 24 were destined for BC, 1 for AK. There were 8 fouled boats in the fall (Sept/Oct). At the night station, 122 boats were inspected, 5 were high risk, none were mussel fouled. A mussel sniffer dog has been trained and is now being used in BC.

9. **Alberta, Kate Wilson (for Cindy Sawchuk – AIS Watercraft Inspections lead)**

- Summary: 11 inspections stations in 2017, province wide (all borders but northern); 2 were 20 hours (eastern and southern borders). Canadian Border Services Agency allowed AB to operate at two ports of entry, and increased notifications of boats crossing the border, given the reservoirs in Montana. 31k inspections; 19 mussel fouled (17 from eastern Canada, 1 kayak). Working on better signage, esp. on secondary roads. 3561 boats were inspected after 19:00; 139 between 22:00 – 06:00; 2 mussel fouled. Conducted 'secret boater' exercise, went to 2 stations in MB, AB and BC – learned a lot about consistency of messaging, triage of high risk boats, and allowed 'course correct' for staff. Secret boater used same scenario with each station. BC/AB initiated a 'passport' for low risk boaters who frequent waterbodies in AB and/or BC. 1828 passports issued; 76-82% of boaters found this to be a positive experience. AB uses 3 mussel sniffer dogs ('Conservation Canines'). The two provinces are working together on a watercraft manufactures form (to address new boats tested in high risk waters).

10. **Waterton National Park, Barb Johnston (Ecologist Team Leader)**

- Summary: all waterways closed to motorized boats. Can open with exception. So easier to address issue.
    - 2010: AIS communication & education initiated
    - 2011: mandatory free permit for motorized boats
    - 2015: decon station purchased
    - 2016: invasive mussels detected in MT
    - 2017: prohibition on all recreational power boats and trailer launched watercraft. Mandatory self-inspection of all non-motorized.
- Concerns: Still have concern regarding use of non-motorized watercraft in the park. Under 2000 self-inspection permits issued this past year. Some from UT, NV, FL and even Europe (packable, inflatable). In discussions with 'Clean Lake Initiative,' putting pressure on park to reopen. Proposing 6-month quarantine.

PART 3: WORKING SESSION FOR ALL PARTICIPANTS RUNNING INSPECTION STATIONS

- Introduction, Tom Woolf (FWP): All in this together, want the same outcome: protect our waters. Way to get on the same page about how to work together.
- Outcome/role of UC3 (Erik Hanson, CSKT): Overall landscape of program. Need a containment program that works. Enforcement enhancements. Identify gaps and make recommendations to make overall AIS program better.

DISCUSSION ON EDUCATION & OUTREACH FOR AIS INSPECTIONS

- CSKT: in 2017 developed brochures, billboards, bumper stickers for boats (part of permit system), radio spots, news articles, website (csktnomussels.org), TV and theatre ads (trailer for Kalispell and Missoula theatres), signage at boat launches. Message consistent throughout: No mussels/Clean Drain Dry. Paula and Georgia did a lot of presentations and outreach efforts. Many coordinated public meetings (advertised) and individual requests from service orgs and others. Mission Valley Power – utility company mailed to every household, also attended dinner and spoke (~400 attendees). Internal and external audiences (cultural committees – internal) targeted as well.
    - Use established entities to help get the message out – newsletters, social media, etc. (e.g. Mission Valley Power as partner). Theatre great partner because is on trailer, is in lobby, and

shows when people check movies online. Laminated info and put where fishing licenses are sold/regulations disseminated. River Honoring festival – AIS station.

- Blackfeet: FBC materials. MT mussel response. Pushing Clean Drain Dry for all boats and equipment.
- Whitefish: Signs, etc. Utility mailer can target those that wouldn't attend public meetings or see materials elsewhere.
    - Highway signage through MDOT – partners have trouble getting signs out on state highways. Collectively sit down with regional DOT staff. Whitefish: have sign design and location, but haven't been able to get it posted. Zach to follow up.
    - City of Whitefish sends letters to local boat owners and businesses. Way to leverage existing communications and relationships. Cooperation with a lot of sporting companies – WLI staff provided training and materials to many local businesses.
- Glacier: Comms Plan part of AIS Response Plan. CDD focus. A lot of the same tools as others.
- FWP: New Public Info Officer working on outreach strategy. Start with plan developed by ICS implementation team, expand on it. Looking at developing new materials, working on development of materials to target other stakeholders. FWP asking for feedback and consistency – are there additional materials that others need? Positive messages – be part of solution, focus on personal responsibility.
    - Way to 'regionalize' passport idea? Currently have contract with design firm and will have to start with 'one size fits all' approach, but can modify in future if there are ideas for improvement. Passport contains info on partner stations rules. Each stamp will be different for each station – with changeable date. Passport for LOW RISK, FREQUENT BOATERS.
    - Evaluation: part of ad firm project. Survey last spring demonstrated that younger demographic hasn't been reached very well; will repeat (UM study).
- Flathead Lakers: expanding communications to hit younger generation. Is there another way other than brochures to reach young people? Flathead Lakers produced video. Send link to list serve.
- Crown Managers Partnership: MT-BC-AB partnership. AIS ID guide produced a few years ago. Run out of copies now. Dispersed at inspection stations, visitor centers, etc. Trying to find funds to reprint. UC3 option?
- Electric Cooperatives: happy to share information – printed mailings, email communications, Rural MT Magazine, etc. Different targeted pieces for audience (40% of population of state)
- Fishing Regulations – way to put info on stations and expectations? Will get back cover for AIS message this season.
- Suggestion to create a handout for expectations and requirements for different programs.
    - Issue with boaters asking about other stations – Blackfeet had a list of all stations with contact info for each station (2 pager). Share with other partners.
- Conservation Districts: Other audiences besides boaters that need to be engaged in program (e.g. irrigators, farmers, municipalities, etc.), have requested help from DNRC & FWP to create.
- Potential for more of a statewide clearinghouse on Edu and outreach? Resource page on website that has everyone's information. Then everyone could use website more. Idea for apps as well.
- TVs at gas stations, tankers that drive around.
- Utilize existing organizations. Many lake-based organizations.
- Clean Drain Dry: is this adequate? Actually, much more complex. Additional steps that we should consider including in messaging. By watercraft type. Train people at inspection stations how to CDD their own boat.
- Youth education: Heidi developing. ISAN contract with FWP in classrooms. Flathead Lakers 'becoming watershed citizens' program – spring field day every year. AIS station at field day with

boat with fake mussels and plants (3rd & 5th graders, over 400 last year). Build inventory of existing resources.

- Podcasts: Subsurface MTPR, really good. New hot media for many. Send link in List Serve. And CSKT website.
- Tourism: lot of money goes to advertising for tourism, but CDD/AIS message needs to get out there as well with these materials. Camping websites for federal and state.
- MT boat validation stickers: every 3 years. Will have info in there in the next iteration.

DISCUSSION ON ENHANCING COMMUNICATIONS (BETWEEN INSPECTION PARTNERS)

- Improvements realized as season went on. Example Whitefish & Blackfeet. Wibaux fouled boat example (didn't have paperwork even though he was inspected and decontaminated).
- Notification: Needs to happen in a timely manner so that next station can be prepared and handle situation.
- All have contact list/call tree – need something that can be shared with partners. Phone/email. Esp. for emergencies, need way to get in touch with stations. Timeliness is real issue. Call until you get someone (have options).
- FWP: have an 'on call' person at all times. Doesn't have authority to hold boat if boat destined for different location (esp. commercial haulers).
    - Must prove that mussels are alive to hold boat in MT (Inter-state commerce law)
    - Lock (quarantine) boats that are staying in MT that have mussels on them. Involve law enforcement if subject not compliant/willing. Set up time to inspect, then decontaminate with hot water and all mussels dead.
    - Seal overview: Current FWP protocol is that a sealed boat is 'good to go.' Send paperwork with seal (accompanies boat). Out of state mussel boats notification to all partners that have stations en route, as well as final destination (where boat will be decontaminated).
        - All seals white except for CF and Tiber
        - Blackfeet: seal looks same but paperwork notes issue with boat
        - If hitch seal broken when reach destination, automatic fine
    - Will deal with boat the best way possible for situation each time
    - High risk form –currently no seal on fouled boats leaving the state
    - Comm hauled boats must have permit
- Follow up: intercept a boat, want to hear back on what happened with the situation (esp. for partner stations that intercepted). Also good way to 'tell story.'
- Protocol: needs to be in place so that everyone is clear on what happens for high risk and mussel fouled boats.
- Communicate with each other professionally and respectfully. Often happens when there are complaints at stations about operation of another station.
- Mussel fouled boats: don't seal because 'not good to go.' But these boats are LOCKED to trailer with trailer lock. Can be removed by destination jurisdiction. All partners should treat fouled boats this way. No timeframe associated with transport at this time.
- Mussel fouled boat that is commercially hauled – generally needs decon at destination

DISCUSSION ON INSPECTION QUESTIONS, DATA COLLECTION & DATA MANAGEMENT

- Colorado data app (digital tablets, survey info collected electronically and stored in cloud): If partners would agree to use tablet & software, will be easier to share information. FWP has not yet gotten final approval to get the app, but 60 tablets ordered. Bank of Qs that can be added or

removed. Example provided. Colorado, Utah, Nevada, Lake Tahoe. Need internet to query data, but not to enter it (can upload when have service).
    - Able to enhance evaluation using tablets? FWP: yes, but only collect data we will use.
    - Ability to spit out summary data from sites? FWP would provide administrative access to partner program managers to be able to access data and use as needed.
- Whitefish: used FWP form with slight modifications
- CSKT: used FWP form unless boater destined for south end of Flathead Lake, then used own.
- Blackfeet: very simple, similar questions to FWP form
- Glacier: use in-house form currently. National Park Service trying to get CO app as well
- FWP: move to one high risk paper form, passport and template
- Passport: one per watercraft. Bow number written on passport.
- Passport can help with early detection/rapid response (EDRR) too – if there was a situation where a mussel boat was launched, could immediately trace where boat at been previously inspected/route. Also provides quality control for inspection stations (ensure staff entering data properly).
- Many of the things that FWP implementing now came out of the Incident Command System.
- UC3 can make recommendations to state/Governor/Legislature/Fish and Wildlife Commission. Required to report to the Environmental Quality Council (EQC) when they meet as well.
- Groups/individuals can also send communications and requests directly to FWP.

DISCUSSION ON ENHANCING INSPECTION TRAINING

What kinds of training do you do? When/where can we coordinate our training efforts?

- Whitefish: CRB/100th Meridian level 2 training for staff at their stations. Augmented with 'personal training' specific to site, audience, program, etc. Used 8 different watercraft types to train staff. Need more hands-on training. Cross-training between inspection and decon staff is needed if they are different crews (so that each knows what to expect).
- CSKT: classroom mostly. Full day of classroom isn't proving to be effective. Move to 'continuous exposure' and doing on site training at the station. Interacting with public, conflict resolution, when to involve enforcement. Have funds to hold separate decontamination training as well. Practical test – grain of rice taped to boat and inspectors must locate all of them.
- FWP: Similar, too much classroom time. Moving to more hands-on training. Need more ballast boat training, it's complex and there are many different types of ballast boats. More on-site training as well. Spend time at stations with staff, learning together.
    - Can open FWP training regionally to other
    - Ballast boats: tough to get info from all the different shops but look at winterization protocols for all types of boats. Apply that to hot water/decon principles. Owner's manual – all factories/manufacturers have protocol. Most boats shipped winterized. Some will be boat specific, some would require looking at motors separately.
- Blackfeet: Train 2 days in classroom and one day practical at lake – see pretty much all boats at lake day. Jay and Heidi. Last week of FEB, first week of MARCH as Browning station will open March 1st for recurring employees (12 returning).
- Glacier: training mid-May when all seasonal staff hired and on board. Interested in attending FWP training (or other partners).
- Dates from all groups should be shared – location/dates
- Some boat shops want to be trained as well – way to offer to wider audience?
- What is compliance at inspection stations? Needs clarification. Survey is key part of determining risk.
    - Blackfeet example: couple at inspection station became belligerent at having to remove tarp from boat. Had to call game warden for assistance. Had state warden visit with the boater as

well. No cell service once 20 min past station, causes some communication and enforcement issues.
    - In some instances, boaters would tell Blackfeet stations that they weren't required to stop with non-motorized or paddleboards at other stations (not true, all watercraft, all stations).
- Enforcement training – CSKT, municipalities on reservation, etc. Over 200 calls in to dispatch for drive-bys. What sort of documentation do they need to feel comfortable enforcing mandatory stations?
    - Blackfeet – all game wardens trained for AIS inspections. Browning DOT just opened, highway patrol connection. Some issues with licensed fishing outfitters on reservation. Would drive by assuming that everyone knew who they were – now must do training too.
- Coordinated training will help build trust between partners

DISCUSSION ON ENFORCEMENT/RULES

- Need for rule change for more authority to hold/quarantine boats (burden of proof with live mussels not realistic)
- Rail transport – haul boats now. Look into issue to mitigate risk (not going to stop at stations).
- Cargo trailers – can't tell if watercraft inside (Blackfeet example).
- CSKT proposed rule – watercraft inspection required for all boats that have launched outside the basin. Would be open for public comment. Input and thoughts on proposed rule (FWP rule that CSKT would operate). Would require inspection prior to launch for all watercraft anywhere in the basin. Any resident that leaves basin would need to be re-inspected.
    - If from out of basin, would have record of inspection. Unless came by when stations closed or didn't stop. Inspection before launch was NOT required on N end of lake last year. CSKT required on S end of lake. FWP tried to accommodate by running Kalispell regional office.
        - This rule would make it consistent around the entire lake
        - Divide stations help accommodate
        - Jesco station would also help with this new potential rule
    - CSKT would then have legal framework to have additional stations to establish program. Looking at jointly with state.
    - Boats that launch on north end and travel down to south end by water. Hearing that there is now discussion of requiring inspection upon entry to the basin. 1. How to enforce when boat is being transported around basin? 2. How to identify boats that have not been inspected that are on the water?
    - CSKT tried to get all boaters inspected before launch (including local boaters) last year. Confronted a lot of people who didn't bother with inspection because they didn't feel like they would be caught. Wondering if sticker worked very well. We come up with rules and ideas and figure out how to implement these things but don't think about budgeting enforcement, obtaining resources for enforcement.
    - Why CSKT wants to go to 24 hour stations. Put them on hwy entry points – there will still be gaps though.
    - Blackfeet: 6 am – 10 pm. After 10 pm no idea what crosses. Might mean many more stations needed.
    - People need to understand that new rule requires that it is the responsibility of the boater to find an open station. Maybe we don't need more inspection stations that are 24 hours, we need more enforcement of the rule. If we're going to make a rule, we should also consider the reality that we need to back up the rule.

- Engaging the citizens to be part of the enforcement – make it very clear that boat has been inspected so that citizens can help ensure that boats are being inspected. You can't tell as easily with seal (need something you can see better).
- Sticker didn't help because boater could leave area and come back, have no idea.
- Are we planning to have all the stations that were open last year open this year? Curious about Jesco location. Downtown location not very convenient. Need to make rule achievable for people. Really important that people understand the role they need to play and make it easier for them.
- FBC rulemaking – electronic sticker was proposed. Without some sort of mechanism to easily check, almost impossible to enforce. Digital database will help if they have been inspected.
- If somebody comes into the basin in the middle of the night, will need to find inspection locally. Supportive. But how do we enforce this? There still aren't stations everywhere.
- Limited ability to enforce. Just have database. Will not be easy to check boats at launches that haven't been inspected.
- Opportunity to engage enforcement that DOES operate on the lake. Two stories where FWP officers had done a boat safety check but never asked if boat had been inspected prior to launch. Need more enforcement and cross-training.
- Most of the people we're worried about don't live here. Could require that a proof of inspection be left in dash of vehicle prior to launch. That would get the out of area boaters.
- 'Inspect before launch' for boats coming over the divide already in place. Not sure if (proposed rule) is good or not. Don't really want FWP resources focused in the Flathead only when there are other waterbodies that would benefit from protections.
- CSKT working with FWP and Lake County to do regulations too. CSKT putting most of resources forward. If Missoula County would chip in, could extent further south as well. Currently FWP runs region 1 office station. Last year funded Jesco station on weekends. Now bringing significant amount of money into basin to build program over time, not looking at huge expenditure from FWP for rule. CSKT is looking to add: Ravalli 24/7, more inspection stations, enforcement. Need regulatory framework to help implement program. Proximity of stations to boundary of basin. Also monitoring and education (including training with Salish & Kootenai College) would be part of program augmentation.
    - On tribal waters, everything but Flathead Lake and Flathead River is closed to motorized boats (except for electric motors).
- CSKT working on MOA with FWP on how to work together on AIS program
- Flathead Lakers: supported Flathead pilot program. Disappointed now that that is not moving forward. Supportive of these provisions given that will help protect basin.

- Mandatory drain plug removal during transport would help (it was required but then repealed at state level. Blackfeet now only entity that requires plug removal).
- Registration of all watercraft in Montana would help. Associated fee would help pay for AIS program for the future. Can identify difference between state vs. out of state and manage them differently while also paying for program. App like the database – could scan barcode. Put on license itself. Looking at 70k watercraft and intercepting few with mussels – it's a lot of work going into finding a needle in the haystack! Focus attention on where highest risk is coming from. Is this something I should engage my local legislator about? Yes, but also a recommendation that could come from the UC3 or MISC (or both) to the Governor and Legislature.
- Idaho example: registration required annually for all motorized boats, fee pays for program (sticker required annually).

- Minnesota example: study on electronic stickers – up-front costs were huge, but long term was a cheaper program.
- Blackfeet partnered with Trout Unlimited and they helped get the message out. We would also have certificate that would put on dash of vehicle. Anglers good about policing themselves. Encourage citizens to report suspicious behavior. When someone not following rules, make it easy to report.
- Make good stories about people who are complying and helping the program succeed. Need to share more success stories. Give people a model.

DISCUSSION ON PROTOCOLS FOR STANDING WATER

- Authority for flushing live wells and ballasts (currently need to visually see) needs to be expanded.
- Drain plug rule. Why can't we have a ban on boats that are transported with plug in?
    - Huge issue, inconsistent across state. Blackfeet have rule.
- FWP: all standing water must be drained – no plug rule at this time

DAY 2: MONITORING

ATTENDANCE: Lori Curtis (UC3 Chair/Flathead Conservation District), Kate Wilson (DNRC), Tom Woolf (FWP), Zach Crete (FWP), Russ Hartzell (FWP), Phil Matson (UC3/UM Flathead Lake Biological Station), Mike Koopal (UC3/Whitefish Lake Institute), Erik Hanson (CSKT), Joann Wallenburn (Clearwater Resource Council), Steve Rosso (Flathead Lakers), Germaine White (CSKT), Dona Rutherford (Blackfeet Fish and Wildlife), Jay Monroe (Blackfeet Fish and Wildlife), Robin Steinkraus (Flathead Lakers), BJ Johnson (UC3/Sea Me Paddle), G.L. Hamilton (FWP), Gordon Luikart (UM Flathead Lake Biological Station), Chris Parrott (UC3/Jesco Marine), Barb Johnston (Waterton Lakes National Park), Sheena Pate, Chris Downs (Glacier National Park), Brian McKeon (Glacier National Park), Rod McNeil (UM Flathead Lake Biological Station), Rich Janssen (CSKT), Tom Bansak (UM Flathead Lake Biological Station), Mary Riddle (Glacier National Park), Lindsey Bona – Eggerman (Missoula County Weed District), Evan R Smith (CSKT), Nanette Nelson (UM/Flathead Lake Biological Station), Paula Webster (CSKT), Caitlin Mitchell (Swan Valley Connections/Blackfoot Challenge/Clearwater Resource Council), Martina Beck, PHONE (British Columbia Ministry of Environment and Climate Change)

PART 1: AIS MONITORING PROGRAM OVERVIEWS

1. **Fish, Wildlife & Park: Tom Woolf (AIS Bureau Chief)**

- Summary: Monitoring efforts significantly expanded in 2016-17. Early detection monitoring – Stacy Schmidt (lead) and early detection lab. Microscopy. Lab does Missouri River samples – so see a fair number of positives in other states (Kansas just last week). 1400 samples from over 200 locations. No veligers or adults detected in 2017. Does not mean they are not still out there. No new AIS detections state wide (multi taxa).
    - Mussel invasion potential: made by ICS to highlight risk. Social pressure (angling, proximity to infested waters, recreation, etc.) + habitat suitability (most of MT waterbodies high risk). 147 samples 10 events, 128 at Tiber 15 events. 83 from flathead, 11 events. Survey locations state-wide. Set up phased monitoring in the future so can focus on high priority waters.

- Tiber/Canyon Ferry: 5 years of sampling at Tiber (positive) – can delist. 3 years of sampling at CF (suspect) – can delist. Colorado example – this has happened a fair amount of times. Was mussel free this summer, but tested positive after 4 years, couldn't be delisted. Monitoring not cut and dry – many things we don't know about it yet. Trying to use best tools out there to do the best we can.
    - Tiber: 16 days on water May-Oct. 128 plankton samples. 66 eDNA samples sent to 3 different labs. 194 total samples. Mussel sniffing dogs, FWS dive team, snorkel surveys, 24 substrates – no detections. Much of Tiber is mud/muck, but some areas with rocks – where dogs focused efforts.
    - Canyon Ferry: 10 days, 147 samples. Snorkel, dive, 10 substrates, dogs – no detections. No hard/fast rule about containment at CF given 'suspect' and validity of sample. Bring up through UC3. Containment waterbody through RULE for 3 years. A lot of resources going into containment at Canyon Ferry.
- Protocols: Mussel positive – veligers identified through microscopy and verified by 2nd lab AND DNA confirmation of the specimen and verified by 2nd lab. To be absolutely sure that we are seeing what we think we are seeing. History in west – a lot of detections that are 'one and done' (no recurrence). Issues such as contamination, misidentification. As we talk about a positive waterbody, we need to be sure that we know what we're talking about – other states dealing with this too.
- Data collection: Data app being developed by FWP. State monitoring crews and partners will be able to use to report (both where monitoring and findings). FWP will provide verification before goes to MT Natural Heritage Program (where data can be shown & downloaded). Will also tie into lab – sample analysis will be reported same way. Can download as spreadsheet or map. Pretty far along but needs finishing. Not ready yet, but by 2018 season.
- Opportunity: we all have the same goal. Maximize ability to see them early on, before they spread. All AIS, not just mussels. Goal – if something slips by it, we find it early and eradicate it if possible. Contain it if not.
- 2018: Evaluate and prioritize sampling – focused sampling on high risk waters. Long term scheduled sampling for lower risk waters (3-5 years). Coordinate with partners – maximize efficiency. ED monitoring – can't sample enough! But can at least ensure not in same place at same time. Electronic data collection app for monitoring/reporting – available for partners in 2018. FWP verifies and then posted on MT Natural Heritage Program. Partners will receive follow up info on samples sent to FWP lab – received, analyzed, results. Coordinate sampling efforts to maximize early detection. Provide plankton samples for FWP for free (microscopy analysis). Communicate new detections of all AIS. Utilize new data app.
- Other monitoring considerations: List of mussel detections in past 10 years that ended up not being a mussel population (no establishment or found again). Over 50 waterbodies – no adult mussels ever found. Must consider as we approach survey and sample, and be very sure when we call something positive. Happened in western states many times.
    - eDNA: presents management challenges. Need your help explaining limitations and what a 'positive' means. Challenge for all western states. eDNA puts us in a difficult management position. States with positives but no mussels appear – sometimes positive for multiple years. Issues with all technologies out there – eDNA and microscopy both. False positives in both. Science of microscopy.
    - Discussion: strengths/weaknesses of all methods. Quite analogous in a way to false positives…not much to be concerned about except how communicated to public. Maybe the way the Milk River positive was presented to the public, would be similar if there

was eDNA detection?

2. **Confederated Salish & Kootenai Tribes, Erik Hanson (AIS Coordinator)**

- Summary: Flathead Lake collaborative with bio station. eDNA sampling on other waters with USGS. Mussel walk at drawdown (10 feet each year). No new detections.
- 2018: Can have people bring samples to lake (4L) – engage more citizen scientists as way to expand eDNA sampling. Mussel walk. Snorkel/visual survey from boat for aquatic plants (work with state on sampling for plants before they become very established). Creating annual monitoring plan for 2018. Need to know where state will monitor first, then move to fill gaps where state is not going to be focused. Mussels and aquatic invasive plants. Tribes monitoring is relatively new.
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    - Effective sampling and 'early detection:' time and cost of sampling – way to incorporate less expensive/labor intensive monitoring. What do we mean by 'early detection?' 99.9% of time, there is going to be nothing you can do.
    - Communication to the public about likelihood of being able to eradicate. ICS example – eradication in Tiber not realistic. When does it pose a risk for overland transport or impact water resources?
    - Early detection really would cost 10s of millions of dollars. Highly variable when mussels spawn in a lake, not just about temperature. Can change from year to year, could be a 2-week window. Example of lake with veliger density (dataset from USACE): Effective sampling – surface of water vs. deeper water. Might need to change to focus on deeper waters as well. Adequate samples from cross-section of lake – might not find them otherwise. First time positives: marina/boat launches = 60. Dam = 15. Midlake= 23. Hatcheries= 25. Just because a boat launches at a marina, doesn't mean that is where the mussels would fall off and establish – could be anywhere in the lake. Most sampling occurs at boat ramps, is this effective? Mussels don't like light, vertical migrations. If spawning at depth and water is stratified, can get trapped closer to bottom.

3. **Northwestern Montana Lakes Volunteer Monitoring Network/Whitefish Monitoring Program, Mike Koopal (Director of the Whitefish Lake Institute)**

- Summary: Really must leverage partnerships to accomplish objectives. Northwest Montana Lakes Volunteer Monitoring Network (NWMLVMN): was originally housed at FBC in the late 80s. Mike formed partnership for Whitefish to Eureka monitoring through FWP. Efforts were combined to become larger group. Water quality focus, now ED monitoring for AIS as well. Once a year, coordinator will go out with volunteers to do more in depth monitoring, including plankton tows for microscopy. Annual AIS monitoring plan approved by FWP. Since 2009, plankton tows have been conducted on 41 lakes in NW Montana for veligers. WLI administers Whitefish AIS Management Plan. Work with FBS on additional mussel monitoring efforts. Some of lakes quite remote – try to get a good cross section of the many lakes in the area. City of Whitefish program collecting eDNA samples 6-25 lakes annually (20-33 samples per lake). Use transects for aquatic plant monitoring – point survey methods. Didn't ask for funding from City of Whitefish because already were paying a lot of inspection program.
    - Beaver Lake example: DNRC found EWM by boat launch in 2011. Ad hoc group of state and local partners. Issue with who oversaw different AIS species. Originally bottom barriers installed – were effective. In 2012, 23.5 lbs. of EWM removed, 5 in 2013, less than 1 every year since. Hired Erik to suction dredge each year. In 2015 15 plants were found, in 2016 only 5 plants were found, in 2017, 2 plants under down log in lake (difficult to

find)! Early detection is important! Might be more complex with dreissenids, but other AIS need to be on the radar too. Will continue to monitor until no plants are found for a number of years. Beaver Lake is hydrologically connected to Whitefish Lake, so worried about EWM fragments. Flathead Lakers let WLI borrow turbidity curtain across the lake to ensure that fragments are not transmitted downstream.

- 2018: WLI: NW lakes program continue. Some redundancies with Clearwater Resource Council/Blackfoot Challenge/Swan Valley Connections – need to communicate. Whitefish Lake will continue to do eDNA as well as submitting microscopy samples.
- MT Lake Book available – publication great for homeowners around the lake, focused on water quality and what people can do to conserve.

4. Blackfeet Nations AIS Monitoring Program, Dona Rutherford (Fish and Wildlife Director)

- Summary: Pretty new to AIS program. Dona took over July 1st of this year. Worked hand in hand with AIS program since 2015. Worked for Glacier National Park for 25 years – AIS was part of training. Last fall when found out Tiber was positive, first thought all waters on the reservation needed to be closed. Blackfeet Environmental office staff were only doing water quality monitoring – not AIS. Dona started collecting samples as soon as ice was off the lakes. Worked with FLBS to have sample analyzed using eDNA analysis. USFWS fisheries biologists helped take samples. 4 lakes on reservation where motorized boats allowed – took 20 samples at each one. Results back from spring samples – no positives. Also put artificial substrates in all 4 lakes. Working closely with FWP on AIS prevention.
- 2018: Blackfeet: No plan, wait to see what FWP has. But do monitor water quality monitoring always. After Tiber, closed waters and sampled in spring and fall.

5. Flathead Lake Biological Station Monitoring, Phil Matson (FLBS Research Specialist)

- Opportunity to be here, deal with our differences and common grounds, and set up a strategy to move forward more proactively. Landowner seat on UC3, work at FBS (coordinating AIS efforts). Very flattered to be called a research specialist at FLBS, have been there 16 years. FLBS is the oldest on western half of Mississippi River. Centre of excellence – ecology, microbiology, forefront of eDNA technology (since 2010 developing primers for ZM and EWM). Est in 1899, world class research. K-12 education, college courses, participate in mussel walk.
- Monitoring summary: Continued response since Tiber detection. All sampling funded through donations and volunteer efforts (mostly CSKT, Flathead Lakers). Equipped with plankton nets and eDNA assays. Went to Tiber to conduct sampling after initial detection – weather restricted full survey. In Flathead Lake, 31 sites in fall, spring and summer. Sites based on weather currents and other data. 12 boat sites, 19 from shore. Sampling expanded to Flathead Basin (not just the lake). A lot of local partners sampling. FWP doing sampling south of the basin, but there aren't a lot of efforts in the Bitterroot Valley, west to Noxon on the Clark Fork.
- eDNA monitoring overview: 64-micron mesh net. 30 cm diameter opening, 4-6 ft. long. ~5k gallons/100-meter tow. DNA bound to organic material. 100 meter tows more efficient than the 1gallon/4L tows, but those are good for citizen science collection. Plankton tow: horizontal (shoreline, surface and deep water by boat) and vertical (deep water). Going through thermocline where veligers hang out, will collect a lot more eDNA (so will do more of this in 2018). Montana Conservation Genetics lab: qPCR detection assay – very sensitive, allows for species identification. Spring 2016 147 sites sampled (qPCR). Send to independent lab for verification. No positive detections – doesn't mean they aren't there. Double blind samples from Lake Mead used for QA/QC. Data makes us cautiously optimistic that Flathead Lake as of spring

2017 is mussel-free. The technology works – every method has possibility of false positive. A positive would mean a lot of additional sampling.
    - Strengths: solid and active scientific community at FLBS. Passionate support from local leaders, media and the public.
    - Challenges: Unclear initial expectations – Tiber example (wanted to do 10+ sites but only got to 6). Adjusting to political climate (a lot of uncertainty, funding issues that everyone is working on). Changing society's culture (clean drain dry – change expectation of public). Can overcome with positivity.
- Future/2018: Incorporate region-wide SOP (collaborate with other partners, consistency). Use of the oblique tow – different than vertical and horizonal tow, will go through thermocline for additional coverage. Lake Mead NPS staff sharing information about what they are seeing. long term lake dataset to locate thermocline. Seasonal sampling with CSKT. Conduct sampling using complementary tools – microscopy, citizen science, PCR. Research and development (such as PCR deployment). Work more efficiently with partners – maximize efforts for best results. Continue to do what we've been doing (fall, summer, spring). Flathead Basin lakes beyond Flathead Lake as well. Coordinate with NW lakes program.
- Discussion on thermocline data/oblique tow. Work on SOP – ensure consistency with partners.

6. Waterton-Glacier International Peace Park AIS Monitoring Program (Chris Downs, Fisheries Program Manager)

- Summary: Waterton and Glacier work on a lot of things together. 2009-2010 risk assessment – FBS AIS Working Group initiated engagement in the issue. RA included boater use, water chemistry, etc. Glacier is a moderate risk compared to other waters of the state. Upper Waterton Lake, Lake McDonald, Bowman, St Mary, Sherburne Reservoir, and Two Medicine Lake all allowed motorized boat and met calcium criteria for mussels (though Two Medicine Lake lower calcium). Motorized Boat Launch Site – the 2+ million acres of Glacier & Waterton Parks have less access points than Tiber!
- 2017: Spring – eDNA. Summer – veliger sampling. Same net, similar methods. 2017 cooperative annual monitoring. Sample between 3-6 sites per lake. Triplicate hauls. Sample where detection most likely, such as boat launches. Work with FBS – important to note that it's less important to decide which technology best, but support all efforts as we need all the tools that are available. Outlet drift samples initiated this year. Maybe need to focus more on deep water samples based on new information this year. Some samples – no DNA at all detected – preservation method the issue?
    - AIS Action Plan (2014) covers prevention, management, monitoring and emergency response. Systems all connected, partnerships very important. Can assist with emergency detection if needed (help state, standing offer). Education and outreach is a large part of program – not just Q/Z, spending a lot of funding on invasive fish issues. CDD messaging in all materials. Cooperative watercraft inspection and decontamination training in May 2017 – in past couple of years, a lot more collaboration with state partners and other NGOs. Building trust and relationships, heading in right direction.
- 2018: keep doing same as previous years. Picked a sweet spot that we could afford and stuck with it. Try to hit same spots in each lake each year.

7. Clearwater Resource Council/Blackfoot Challenge/Swan Valley Connections AIS Monitoring, Caitlin Mitchell (Monitoring Technician)

- Joann W. SV Connections (Seely Lake): Remember where you first heard of zebra mussels? I do. Was working at FLBS but building retirement home at Seely Lake. Started with no money – region 1 FWP provided 12" PVC substrates. Distributed to homeowners on lakes in the area. Over time FWP provided nets, alcohol, ropes and protocols for plankton tows. Crown of the Continent project funded Joann to expand citizen science program (was already doing water quality monitoring, but added AIS). Efforts have varied over time, focus on 6 major lakes. Used USFS and DNRC funding for AIS monitoring (mussels, EWM and curlyleaf pondweed). Started AIS monitoring in 2011.
- Summary: Enlisted Blackfoot Challenge and Swan Valley Connections to partner on monitoring for 2017. Project area = Swans Lake to Browns Lake (near Lincoln). CRC does smaller less trafficked lakes in addition to higher risk areas (some non-motorized only). 3-year sampling rotation helps maintain water quality summary for watershed.
    - Microscopy sampling 6 times (May – Oct), eDNA analysis (May, Aug, Oct) for mussels, EWM and CLP. Inlets, outlets, launches, marinas, bays and deep holes. Community outreach and involvement, recruiting volunteers, news articles, HOA meetings and community events, social media. Each lake had own sampling kit (nets, sample bottles, data collection) eliminated possibility for cross-contamination between lakes. Also provided for volunteers to take samples on their own.
    - Attach two floaters and one sinker to the rim of the net. Rein out net 100 feet. Surgical gloves used for eDNA sampling. 5-10 feet shorter than bottom of lake to avoid kicking up sediment. Electronic database master sheet of all lakes in project area with detailed notes.
- What worked well: Use of citizen science volunteers. Increased capacity through partnerships (shared use of one field tech for all 3 organizations, better efficiency and consistency). Education and outreach (build relationships and spread awareness, building relationships in the communities, build stronger volunteer base). Was able to use DNRC funding to meet FWP goals
- Challenges: volunteer recruitment, bleaching equipment before eDNA sampling, transportation of samples to Helena lab, Rice Ridge & Liberty fires (air quality was bad – burned for over 50 days), Seely Lake was closed for a long period.
- 2018: Changes each year for protocols, but continue to monitor all 6 lakes as in years past. If learn new info for protocols, can adapt. Once every 4 weeks seem somewhat likely to pick up spawning. eDNA for mussels in early spring because 16 boats had come from Tiber or CF previous year. August prime time for plant growth (so do both plants and mussels during that month). Oct/Nov Lake Winnipeg got highest count of mussel veligers. Utilize homeowner associations.
    - Following Joann's lead on monitoring protocols. Lolo National Forest provided funding for eDNA. Beth Gardner in Flathead area (USFS), other lakes USFWS fund eDNA.

8. British Columbia AIS Monitoring, Martina Beck (Mussel Defense Coordinator)

- Summary: BC collected 383 samples from 101 lakes in 2017 (June – Oct). Samples collected based on lake chemistry (pH and calcium where available), high traffic lakes (and close to population centers), opportunistically (existing monitoring programs). Using new lab (cross-polarized light microscopy). Samples buffered in sodium bicarbonate either in the field or lab to achieve appropriate pH levels. QA/QC conducted internally by lab.
- Strengths: Funding increase, strong interest from partners, research with partners at U of Alberta and federal gov.

- Challenges: Wildfires! Access was difficult, backcountry closures. Need to increase substrate samplers (citizen science). Need to develop more robust decision tool for where/when to sample. Need to enhance coordination of messaging from across western jurisdictions on monitoring and role of emerging tools.
- 2018: Received $450k for next 3 years to enhance monitoring program. Developing new funding application process for external contractors to conduct sample collection. Updating protocol (sample selection, collection, preservation and disinfection). Align with best available science and work being done in other western jurisdictions. Working with PhD student to optimize lake monitoring efforts based on inspection data. Working with fed gov on eDNA research as potential tool for early detection.

9. Alberta AIS Monitoring, Kate Wilson (for Ron Zurawell, Limnologist)

- Summary: AB started monitoring for AIS in 2013 (mussels and spiny water flea only) by adding AIS plankton tows and substrates to the existing surface water quality monitoring program. Sampling is conducted monthly from July – Sept (3 events, composite samples) for lakes and new this year, June-Aug (5 events, individual samples/sites) in irrigation reservoirs in southern Alberta. The Alberta Irrigation Projects Association (AIPA) was able to contribute $91k to hire a contractor to augment monitoring efforts in their highly susceptible irrigation reservoirs. Sampling efforts are shared between the government water quality monitoring staff, provincial parks staff, agricultural staff, the Alberta Lake Management Society and AIPA. In 2017 84 lakes/reservoirs (150 sites; 23 outlet canals) and 2 rivers were sampled. Veliger samples are sent to local invertebrate taxonomist/lab for analysis by cross-polarized light microscopy. QA/QC blanks and duplicates are also submitted and split samples sent to other taxonomists. Currently there is no additional funding for AIS monitoring or analysis; it is covered by the water quality monitoring program.
- Working well: Uses existing lake WQ monitoring program (low cost, easy to implement rapidly). Monitoring efforts highly valued and supported by AIS stakeholders.
- Challenges: Lack of dedicated monitoring resources (staff, equipment, funding). Waterbodies selected for WQ program (not prioritized by AIS risk). Limited number of waterbodies can be sampled. Limited currently to mussels and spiny waterflea (no other AIS). Program sustainability requires ongoing funding, partner and agency support, recognition as part of AIS Program.
- 2018: Status quo – though dependent on partners availability and AIPA funding. Considering changing all samples to site specific (vs. composite) so that in the event of a detection the location would be known. Implementing a pilot bench-top qPCR project. Refining QA/QC program.

PART 2: WORKING SESSION FOR ALL PARTICANTS RUNNING MONITORING PROGRAMS

- Tom: desired outcomes – collectively schedule sampling to maximize sampling efficiency and early detection. When we are out there collecting, sample in such a way that maximizes the probability of detecting. Adjust protocols where needed. *Goals: What are we trying to achieve and by when?*

DISCUSSION ON MONITORING PROGRAMS/PROTOCOLS

- Decision tree on where to sample that is defendable (e.g. mussel can't occur in a flowing system). Last summer there were as many samples in the Bitterroot River as there were in Flathead Lake. Base on science and where mussels can occur.

- Protocols for different methods (microscopy, eDNA)? collection, preservation of samples, how to get to lab. qPCR vs. other analysis. Sample created for FWP as identical as possible for eDNA – was goal for last season.
- FWP: statewide monitoring plan would target plankton samples for microscopy, also looking for all other AIS. Contract with FBS to work on eDNA as well – not sure how to roll out. Have the ability but not sure how to shape. FWP Draft Protocol available for review – lines out our microscopy protocols, buffering samples (helps with shelf life of samples). Tip-Mont hotline (24/7) more enforcement driven, but line available for all AIS issues (including if a positive result is detected).
- Clark Fork & Kootenai River Basin Working Group: Upper & middle Clark fork and Kootenai river. Doing any AIS monitoring or other work?
- With no detections in 2017, funding decreased for monitoring? No. 2 year cycle. Plus federal funding – same level as last year.
- DNRC AIS grant to monitor? It's an option. Working with local counties to get them to do more monitoring. Push to Conservation Districts to engage more.
- Expand monitoring to rest of UC basin – no monitoring that we know of south of Flathead. Need to expand monitoring network.
- FLBS working in a lake 300 feet deep, we're sampling in lakes that are 8 feet deep. Can't go a meter off the bottom or net will be destroyed. Variances in different lakes.
- Every site/every lake is different. Existing protocols? Using same nets, same basic protocol. Side by side sample.
- Clearwater Resource Council/Swan Valley Connections/Blackfoot Challenge: Sample 6 times throughout summer. Split sample on 3 of them. Using same sample for eDNA and microscopy. If using eDNA, completely bleach all equipment. Dedicated kits for each lake. For microscopy do hot water wash (hang net up, run hot water through, and dry thoroughly). Not interested in destroying evidence from previous sampling efforts. Very small lakes compared to size of Flathead.
- FLBS: Standardized protocol for many years. Training video. Only thing haven't always done is buffer for microscopy. High percent of ethanol required, no UV, cool for eDNA. Similarities of field protocols. One of issues is alcohol concentration (between 2 methods).
- One of benefits of doing 'grab samples' can eliminate potential contamination issues. Which is better? Cost/effort tradeoffs for types of sampling.
    - Grab sample: gloves. Filter into gallon jug with vacuum pump into sample bag. Paper filter, can be refrigerated or frozen. Shipped on dry ice. So, provides days to get to lab. Costs are pump ($20-$1000).
    - FLBS has capacity to use filter, but unsure of what filter to use. Sample into lab within 24 hours. With higher organics, need additional filtering. Water quality dependent. Bigger water samples (plankton tows) better for 'needle in haystack' than grab samples (only 4L). Potential for higher risk of contamination though. Streams using water samples all the time, but that's because DNA is coming to you (moving water).
    - Unpublished study showed higher concertation at very bottom and very top
- Nets: one for microscopy – decon protocols very rigorous for field staff because sometimes sampling multiple waterbodies in one day. Dedicated nets at Tiber and CF. One for eDNA – transfers very easily. Bleach soak and vinegar soak required.
- Main difference with eDNA protocol is with decontamination of equipment
- If you have the equipment, don't use it in other waterbodies (good practice). All equipment – nets, sample bottles, etc.

- R&D needed on how to get samples from bottom (hose?)
- Sampling for microscopy – need to be sampling when mussels might be reproducing. Don't have to do that with eDNA. Can we use eDNA every few months (more frequently) instead of only in summer? Keeping one net on a single lake sounds ok if small lake and don't care about what location on lake might be. Cleaning net between sampling times? Yes.
- CMP has discussed developing a transboundary protocol for monitoring. Hope that whatever protocol you land on can be used in MT and also BC and AB. Keep that in mind as discussing.

DISCUSSION ON SAMPLE PRESERVATION

- CRB/100th Meridian team has developed standards used by provinces and states in the west.
- Wondering about ethanol difference between microscopy and eDNA (70% sufficient for both methods). Spray nets with ethanol spray.
- FWP: 70% ethanol this season (adjusted from 50%) so either method can be used.
- Ph of 8 needed so buffer (in lake water while in boat) but then put in pure alcohol when get to shore. Issue with acidity?
- Discussion of baking soda vs. tris and impact of bleach on equipment replacement sample vials – move away from baking soda to tris
- 95% ethanol hard to come by. FLBS provides, FWP has not in the past.
- BOR lab only uses 15% ethanol and requires refrigeration of sample (for microscopy) – because of shipping requirements?
- DNA degradation may start immediately. It's a race to get water out of sample as soon as possible. The earlier you get water concentrations low (with ethanol), the better chance of detection.
- Sample preservation – agree on methods for both types of sampling (simplify). Dark, cool (refrigerate). Include preservation in FWP protocol, consider changing preservation to fit both methods of sampling.

DISCUSSION ON ENVIRONMENTAL DNA (eDNA)

- Disagreement in science community about which method is more (paper filter vs. tow for eDNA)
- Why isn't eDNA funded by DNRC grants? Projects should be in line with FWP AIS program – eDNA has not been a method utilized by the state to date. This could be modified in the future.
- eDNA picks up Sloughing off cells and pseudo feces (microscopy picks up veliger larvae)
- FLBS: Labs around the world – mature field scientifically. Best practices for sample collection and analysis. Partly because of research into dinosaur DNA for many years. A lot of literature from a lot of labs showing it works well. Veliger technology has issues – Milk River example (contaminated net likely). While image can make you comfortable, it's mostly in the interpretation. Requires rigor. Definition of positive sample vs. positive lake. Managers issue different then labs. Requires multiple independent observations.
- FWP would support FLBS pursuing funding for research. Supportive of getting it as an operational tool, but need to work out the kinks. CRB meeting on monitoring – consensus that eDNA is a research tool but not a management tool at this point.
- eDNA has been held to a much higher standard than microscopy (as a method) vs. Value of microscopy is that you have that image and can stand behind it. Management decision behind eDNA. We need communicate and work together.
- Use both. If taking samples, worthwhile to send to both. Compare efficacy of both.
- FWP requires veliger – but also DNA? qPCR required as secondary method. 1 sample microscopy verified by 2nd lab AND 2nd sampling event.

- Suggestion to use eDNA as 'odor,' that deserves a closer look (e.g. more intensive sampling
- FLBS: What we've been saying all along. If there is a sample with eDNA
    - Run 3 replicates. 6 replicates form the re-extraction. Run initial and re-extraction and send to independent lab. 18+ replicates for positive detection. Independent lab. 3-6 replications are the standard of the west. Risk of false negative higher than false positive.
- Utah/western state examples of delisted waters that still test positive for eDNA
- CRB/100th Meridian (western states/provinces) discussion on viability (live vs dead organisms)
- What is bottom line for community is if we get positive eDNA result, but haven't found any veligers? What if there are multiple eDNA positives, containment measure?
- 'Positive' is a loaded word for the public and decision makers. Needs attention. How you express to the public what is going on must be careful.
    - Communicating about eDNA results (interpretation) needs to be ironed out in a protocol, perhaps with Monitoring Committee
- Other side is you want the public to know what the potential consequences/steps if there is a positive (e.g. there might be closures or restrictions)
- A Science Advisory Panel will be developed by the Montana Invasive Species Council to focus on eDNA and provide recommendations to move forward. The outcome/recommendations of the panel can provide information to the UC3 Monitoring Committee as well.

DISCUSSION ON REPORTING OF AIS & MONITORING EFFORTS

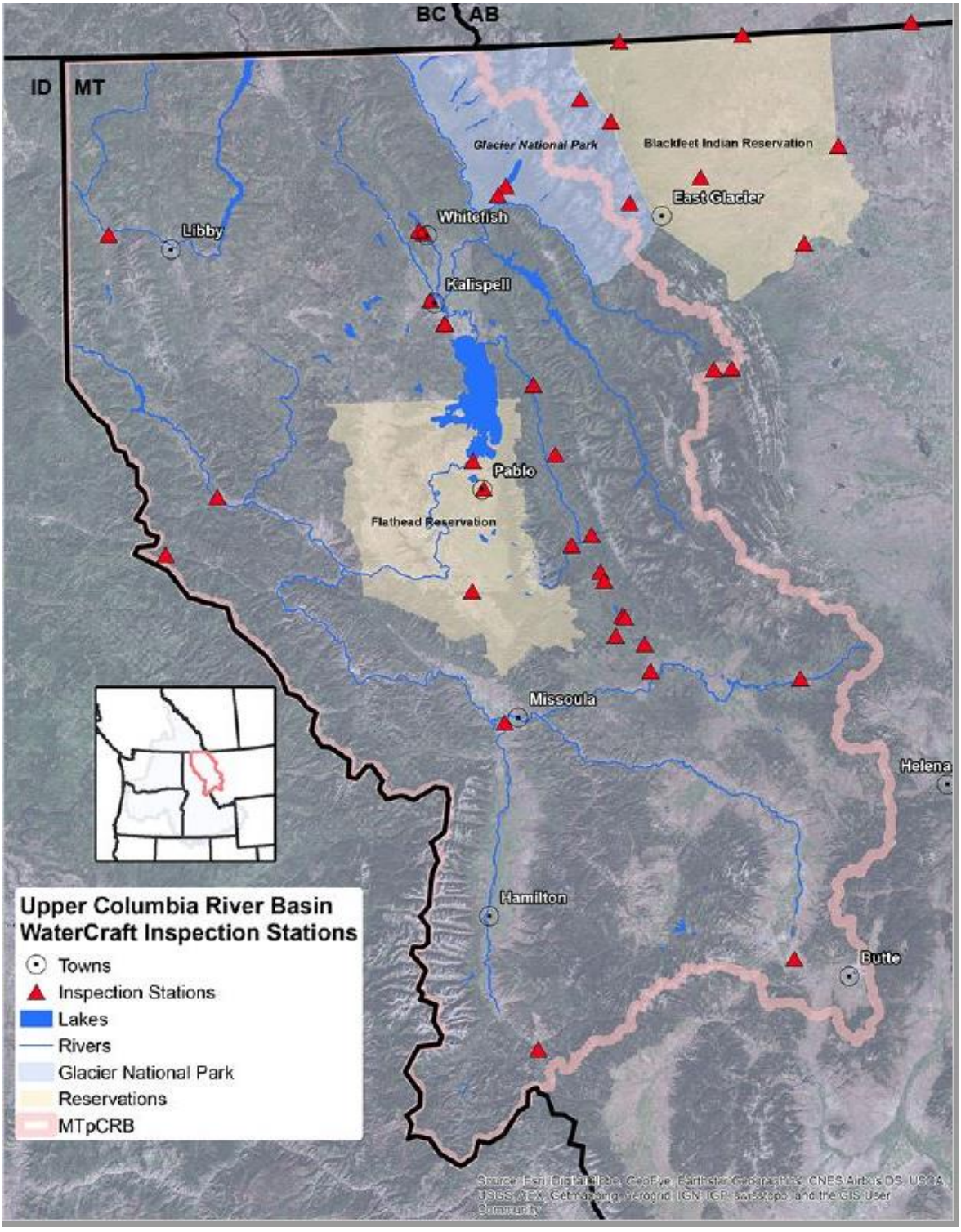
- FWP developing reporting app for monitoring efforts and reports of invasive species. Ideally all partners will utilize so that we can better coordinate and share information. Once monitoring efforts (e.g. locations monitoring taking place) entered into data app, would go to Montana Natural Heritage Program as way to access and use data (all partners). SAR/IT form needed.
- MT Natural Heritage Program summary: existing program that covers native species and rare species, but to date has not captured invasive species. A Montana solution to the data reporting and management issue for invasive species. Intention is to cover both aquatic and terrestrial species, but this effort is just being initiated. The program can pull from other databases as well (e.g. FWP data app when developed, EDDmapS, imapinvasives.com, etc.), and users can download data in maps or excel spreadsheets. It is capable of showing monitoring effort (e.g. where sampling is taking place) as well as invasive species detections. All reports will be verified by appropriate management agency before results are posted on the site.
- Will the FWP data app be one step or two? Extra work or one application that can be utilized for data entry. Or FLBS would need to do 2 processes? Needs further discussion/clarification once

DISCUSSION ON OTHER AIS ITEMS/PUBLIC COMMENT

- Education plan for state? Liz Lodman (FWP) and Kate Wilson (DNRC). National Plan with PR firm (focus on out of state boaters). In state plan and resources – user groups and broad public audience. Spin to positive message – do you your part, protect waters of state. UC3 education committee will work on inventory of existing and getting feedback on state efforts (new materials, dissemination, etc.).
- Lower Clark fork, bitterroot – need more engagement
- Has UC3 engaged Flathead AIS Working Group? Reason why we are here and folks from other areas of the UC are not (further ahead). Need contacts to follow up.

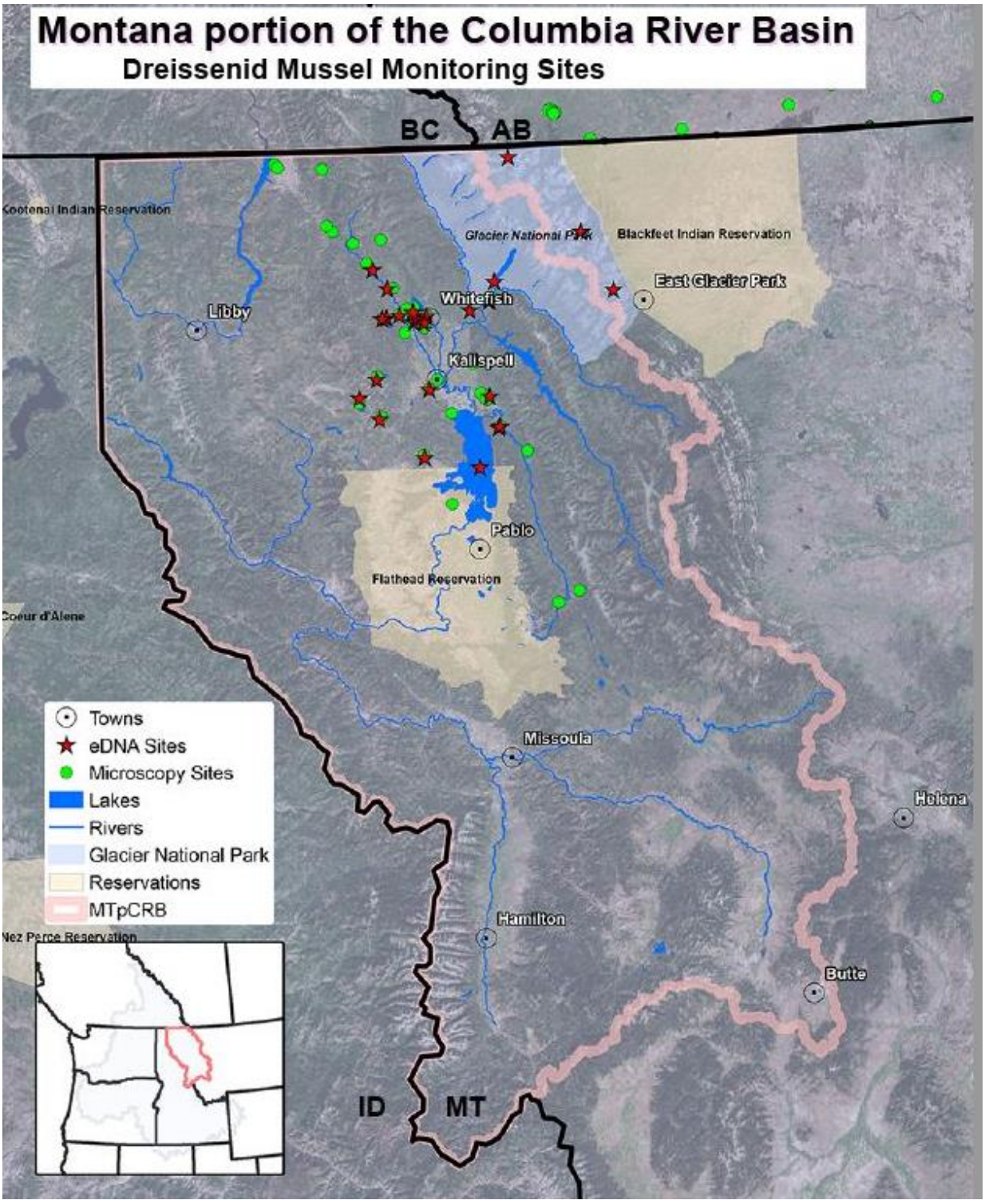
- If interested in serving on a UC3 Committee, don't need to be member of UC3, can email Lori Curtis or Kate Wilson. UC3 will vet parties and ensure good representation and manageable size of Committees (to be created at Jan 24 meeting).
- Committees as means of getting together for next year and moving all areas forward.
- UC3 as two parts – short term helping operationalize, and long term – big picture. How to prioritize work and not overburden volunteer committees.

APPENDIX A: 2017 WATERCRAFT INSPECTION LOCATIONS

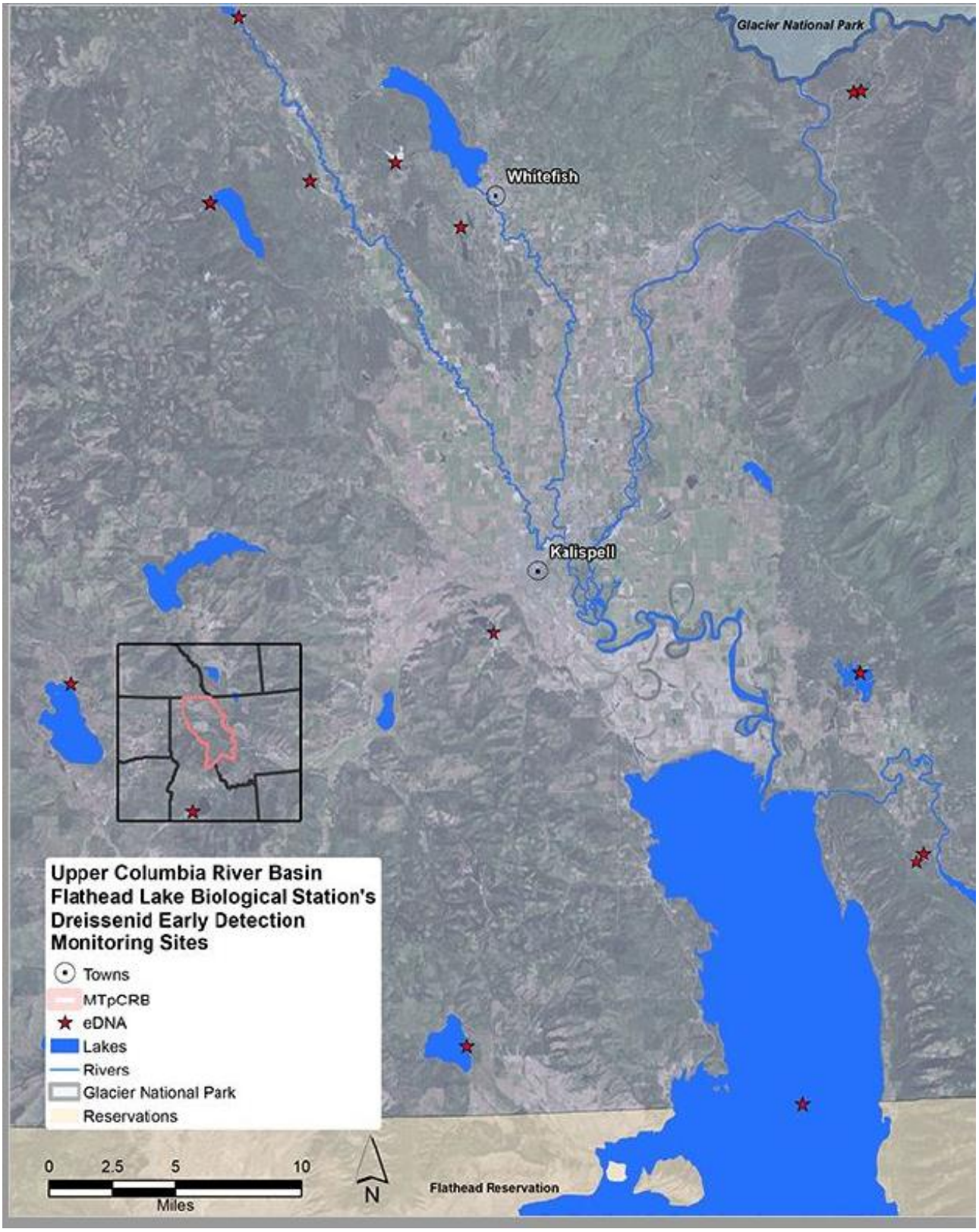


MAP 1: Watercraft inspection locations in or bordering the Upper Columbia Basin (maps provided by Phil Matson, Flathead Lake Biological Station)

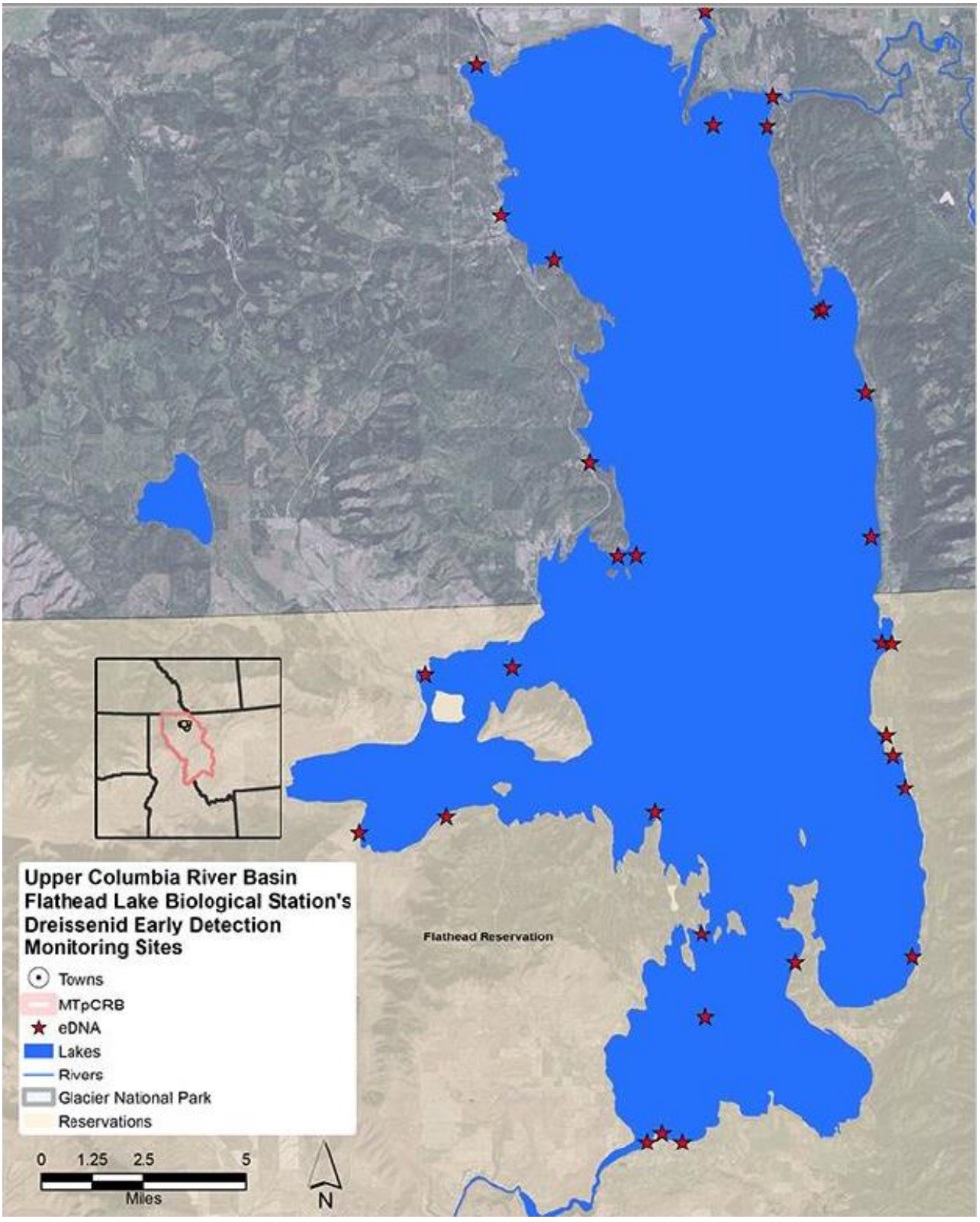
APPENDIX B: 2017 DREISSENID MUSSEL MONITORING LOCATIONS



MAP 2: Dreissenid mussel monitoring locations in the Upper Columbia Basin (maps provided by Phil Matson, Flathead Lake Biological Station)



MAP 3: Dreissenid mussel monitoring locations in the Upper Columbia Basin by the Flathead Lake Biological Station (maps provided by Phil Matson, Flathead Lake Biological Station)



MAP 4: Dreissenid mussel monitoring locations in Flathead Lake by the Flathead Lake Biological Station (maps provided by Phil Matson, Flathead Lake Biological Station)

RESOURCES

Blackfeet Nation's AIS Program: http://blackfeetfishandwildlife.net/

Confederated Salish & Kootenai Tribes AIS Program: http://csktnomussels.org/

Fish Wildlife & Parks AIS Program: http://fwp.mt.gov/fishAndWildlife/species/ais/ and http://musselresponse.mt.gov/

Flathead Lakers AIS resources: https://flatheadlakers.org/programsissues/thwarting-aquatic-invaders/

Flathead Basin Commission's AIS Resources: http://flatheadbasincommission.org/chd_sec3pg2.asp

Glacier National Park's AIS Program: https://www.nps.gov/glac/planyourvisit/ais.htm

Montana Invasive Species Council: http://dnrc.mt.gov/divisions/cardd/montana-invasive-species-program/misc

Montana Public Radio 'SubSurface' podcasts: http://mtpr.org/programs/subsurface-resisting-montanas-underwater-invaders

Province of Alberta's AIS Program: http://aep.alberta.ca/fish-wildlife/invasive-species/aquatic-invasive-species/default.aspx

Province of British Columbia's AIS Program: https://www.for.gov.bc.ca/hra/invasive-species/mussels.htm

Upper Columbia Conservation Commission: http://dnrc.mt.gov/divisions/cardd/montana-invasive-species-program/uc3

Waterton National Park's AIS Rules: https://www.pc.gc.ca/en/pn-np/ab/waterton/info/index/plans/reglements-regulations/envahissantes-invasive

Western AIS Information (Pacific States Marine Fisheries Commission): http://www.westernais.org/